

A Team Approach for the Development of a Simulated Workplace Protection Factor Study of Powered Air Purifying Respirators and Supplied Air Hoods.

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The assigned protection factors (APF) for powered air purifying respirators (PAPR) and supplied air hoods (SAH) are currently in a state of confusion. The ANSI Z88.2 Committee for Respiratory Protection in 1992 divided these types of respirators into classes based on the design of the respiratory inlet covering, and assigned a realistic APF for each class. In OSHA's proposed revisions to CFR Part 1910.134 et al, the APFs from the NIOSH Respirator Decisions Logic are cited. These PAPR and SAH APFs are unrealistically low and a clear definition addressing the design and performance differences for each type of respirator is not provided. The OSHA/NIOSH APF for PAPRs and SAHs is 25 as compared to the corresponding ANSI APF which is 1000. These inconsistencies were recognized by the Organization Resources Counselors, Inc. (ORC) pharmaceutical company members, who rely extensively upon these types of respirators to provide safe working environments in many of their manufacturing processes. To respond to this situation, ORC initiated a respirator research program designed to test selected respirators using a representative set of simulated workplace activities and to submit the data collected to OSHA. The Lawrence Livermore National Laboratory was chosen to participate in development of the experimental design and carry out the study because of their experience, staff and facilities. A modified ANSI/OSHA test exercise protocol was developed to evaluate the respirators. Respirators manufacturers of the selected equipment were invited to participate in the development of the experimental protocol as well as to share in the costs of the study. Funding from the pharmaceutical companies and respirator manufacturers is being collected and the study will begin shortly. The results from this study will be shared with OSHA and published.

Our team approach of respirator manufacturers, users and government regulators, working together to solve a recognized problem, demonstrates a new model which can be used to solve other complex health and safety problems.

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